

## Appendix D

### SOILS DATA

# NORTHWEST TESTING LABORATORIES, INC.

CONSTRUCTION INSPECTION  
MATERIALS INSPECTION  
CHEMICAL ANALYSIS  
PHYSICAL TESTING

5405 N. Lagoon Avenue  
P.O. Box 17126  
Portland, Oregon 97217-0126  
Phone: (503) 289-1778

NON-DESTRUCTIVE TESTING  
WELDING CERTIFICATION  
SOIL TESTING  
METALLURGY

December 14, 1988

RECEIVED

Circle C Corporation  
31313 Paradise Park Road  
Ridgefield, Washington 98642  
Attn: Carl Carlson

RUSS FETROW ENGINEERING, INC.  
P.O. BOX 501, Salem, OR 97303

IMPORT Subject: Analysis and tests performed on one  
(1) clay sample submitted 10-25-88

Report:

Gradation Analysis: Land Fill Sample AASHTO T-11, 27

<u>Sieve Size</u>	<u>% Retained</u>	<u>% Passing</u>
3/8"	0	100
#4	0	100
#10	0.2	99.8
#20	0.5	99.3
#40	0.6	98.5
#60	1.1	97.4
#120	9.0	88.4
#200	15.4	73.0
#-200	73.0	

Atterburg Limits:

Liquid Limit .....	33
Plastic Limit .....	23
Plastic Index .....	10

Permeability:

Maximum Density AASHTO: T-180 .....	114.4
Optimum Moisture .....	15.1
Density, pct., Dry .....	106.4
Compaction, % of T-180 .....	93.5
Coefficient of Permeability, cm/sec .....	*

\*Samples were saturated with a water pressure head exceeding  
25 feet for 30 days with no visible indication of permeability.

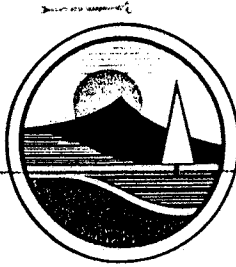
Respectfully,  
NORTHWEST TESTING LABORATORIES, INC.

*Dennis Cody*  
Dennis Cody, Supervisor  
Field Operations  
Portland and Salem

Report Number: 85930B

**Russ Fetrow Engineering Inc.**

GeoEnvironmental Division Office



2535B Prairie Road, Eugene, Oregon 97402

(503) 689-8110 Fax (503) 689-1524

June 15, 1990

Mr. Thomas Barton  
Director of Environmental Health  
Southwest Washington Health District  
P.O. Box 1870  
Vancouver, WA 98668

RE: CIRCLE "C" CORPORATION  
CLOSURE/POST-CLOSURE PLAN

Dear Mr. Barton:

Transmitted with this letter are two copies of the revised closure/post-closure plan for the existing cell at Circle "C" Landfill. You should receive two bound copies of the plan narrative and two full size sets of engineering drawings. The plan is intended to fulfill Condition WDOE 3 of the Circle "C" variance. An additional copy of the plan and drawings were mailed today to Mr. Kirk Cook of the Washington Department of Ecology Southwest Regional Office. Please do not hesitate to call if we can be of further assistance.

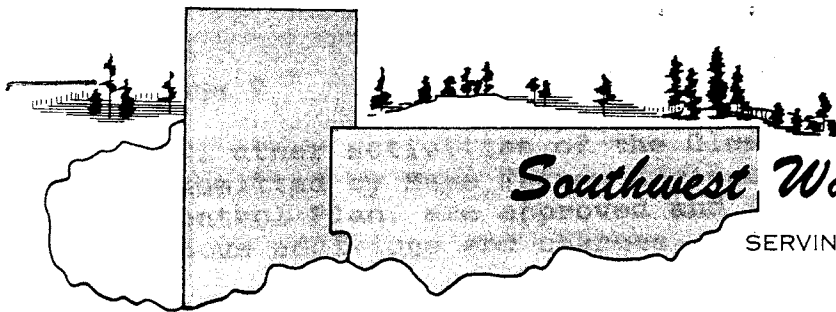
Sincerely,

RUSS FETROW ENGINEERING, INC.

Nick Van Kleeck  
Regulatory Specialist

cc: Kirk Cook, WDOE SW Region  
Carl/Caren Carlson, Circle "C" Corporation  
Carl Mason, Mason and Associates

circle01/clospln.let



## Southwest Washington Health District

SERVING CLARK, KLIKITAT AND SKAMANIA COUNTIES

August 27, 1990

Mr. Carl Carlson  
Ms. Caren Carlson  
Circle "C" Corporation  
31313 Paradise Park Rd.  
Ridgefield, WA 98642

RE: Closure/Post Closure Plan

Dear Mr. and Ms. Carlson:

With the resolution of elevation and contours during our meeting with representatives of Russ Fetrow Engineering and the Washington State Department of Ecology on Friday, August 24, the Closure/Post Closure Plan submitted on June 15, 1990, can be approved with the following conditions:

1. The 280' maximum contour grade will be modified to join the dedicated asbestos disposal area located at the northwest portion of the fill site as discussed during last Friday's meeting.
2. The top cap must include at least an 18 inch topsoil layer over the entire fill site. *6-8"*
3. Gas monitoring should be conducted quarterly rather than semi-annually. *6-28-91*
4. Groundwater flow directions and rates, as well as elevations, should be documented over an entire water year rather than annually to provide specific information, especially for shallow groundwater.

Some of the above comments are referenced from the Washington State Department of Ecology letter dated August 10, 1990. A map of the under drain system was shown, and a copy of the final approved financial assurance document sent to the Washington State Department of Ecology.

### ADDRESS REPLY TO APPROPRIATE OFFICE:

ADMINISTRATIVE OFFICE  
VANCOUVER/CLARK COUNTY HEALTH CENTER  
P.O. BOX 1870 — 2000 FORT VANCOUVER WAY  
Vancouver, WA 98668  
(206) 695-9215

STEVENSON/SKAMANIA COUNTY HEALTH CENTER  
.96L MILE POST - 2nd ST. EXT. - P.O. BOX 162  
Stevenson, WA 98648  
(509) 427-5138

WHITE SALMON/KLIKITAT COUNTY HEALTH CENTER  
170 N.W. LINCOLN - P.O. BOX 159  
White Salmon, WA 98672  
(509) 493-1558

GOLDENDALE/KLIKITAT COUNTY HEALTH CENTER  
228 WEST MAIN STREET  
Goldendale, WA 98620  
(509) 773-4565

Page 2

All other activities of the Closure/Post Closure Plan, as submitted by Russ Fetrow Engineering, including the Erosion Control Plan, are approved and should be administered with the above additions and changes.

Please call me at 696-8428 regarding closure fund approvals or if you have any further questions.

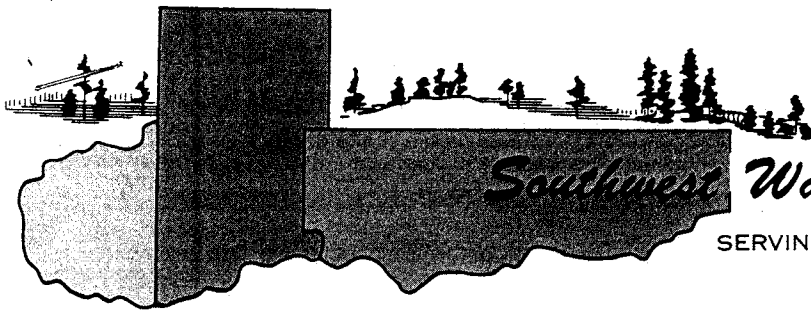
Sincerely,



Gary Bickett  
Environmental Health Specialist

GB/ct

cc: Kirk Cook  
Chris Mathews  
Russ Fetrow  
Nick Van Kleeck  
Brian Carlson



9203240143

gto

## Southwest Washington Health District

SERVING CLARK, KLIKITAT AND SKAMANIA COUNTIES

ADDRESS REPLY TO  
APPROPRIATE OFFICE

March 24, 1992

CLARK COUNTY  
P.O. Box 1870  
2000 FORT VANCOUVER WAY  
VANCOUVER, WA 98663  
(206) 695-9215  
FAX (206) 696-8424

Mr. Carl Carlson  
Ms. Caren Carlson  
Circle "C" Corporation  
31313 N. W. Paradise Park Road  
Ridgefield, Washington 98642

RE: Circle C Landfill

Dear Mr. and Ms. Carlson:

The Southwest Washington Health District has received the following items regarding the closure of the Circle C Landfill:

1. Approved closure plan signed by a professional engineer registered in the State of Washington with modification to represent as-built charges.
2. Certification by the owner and operator that the site has been closed in accordance with the approved closure plan.
3. Certification by James F. Nims, a professional engineer registered in the State of Washington that the site has been closed in accordance with the approved closure plan.
4. Certification from Donald R. Melnick, a professional engineer registered in the State of Washington, that the site has been closed in accordance with the approved closure plans. Mr. Melnick is affiliated with R. W. Beck and Associates.

Based upon the information, the Southwest Washington Health District has concluded that the Circle C Landfill has been closed in accordance with the specifications of the approved closure plan and the closure requirements of WAC 173-304-407.

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SKAMANIA COUNTY  
P.O. Box 162  
2ND STREET EXTENSION  
STEVENSON, WA 98648  
(509) 427-5138

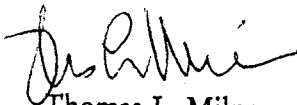
WEST KLIKITAT COUNTY  
P.O. Box 159  
170 N.W. LINCOLN  
WHITE SALMON, WA 98672  
(509) 493-1558

EAST KLIKITAT COUNTY  
228 WEST MAIN STREET, SUITE 130  
GOLDENDALE, WA 98620  
(509) 773-4565

Circle C Corporation  
March 24, 1992  
Page Two

Effective October 1, 1991, post-closure activities have begun. This letter is written to you both pursuant to WAC 173-304-407(5)(e).

Sincerely,



Thomas L. Milne,  
Executive Director

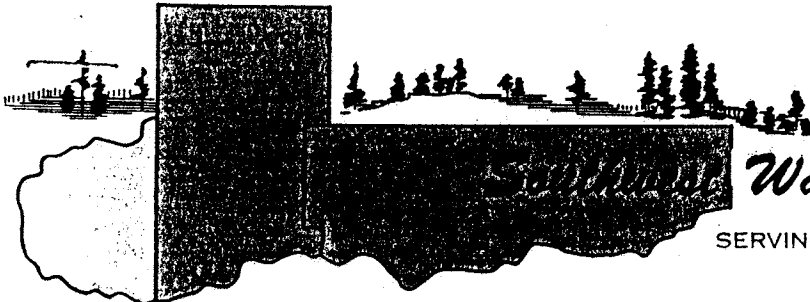
cc: Department of Ecology, Olympia, WA.  
Ben Shafton, Attorney  
Tom Barton, Director, EHS  
Gary Bickett, EHS  
Kaye Masco, Board of Health Chair  
George Stillman, Clark County

np/N-1

FILED FOR RECORD  
CLARK CO. WASH  
*Carl Carlson*  
MAR 24 1 27 PM '92

AUDITOR  
ELIZABETH A. LUCE

424



## Washington Health District

SERVING CLARK, KLICKITAT AND SKAMANIA COUNTIES

March 15, 1993

Caren Carlson  
Circle C Landfill  
31313 Paradise Park Road  
Ridgefield, WA 98642

Re: Post Closure Monitoring

Dear Caren:

The Health District can approve your request to modify the Post Closure Monitoring Plan from quarterly sampling of groundwater and surface water monitoring points to semiannual sampling. The data collected so far reveals no significant concentrations of groundwater contaminants at the point of compliance. Since the post closure fund has limited resources, reducing the frequency of water sampling to twice yearly will allow continued long term monitoring of this site. This approval is subject to concurrence from the Washington State Department of Ecology.

Sampling must take place during spring (March/April) and fall (September/October). The consultant can specify exact times of optimal wet and dry subsurface conditions based on past experience and data. The suction lysimeters located around the perimeter of the underdrain liquid treatment area should also be sampled during each semiannual monitoring event. The initial sampling will be conducted by Brown and Caldwell Consultants.

Your concern for proper post closure maintenance is appreciated.

Sincerely,

Gary Bickett  
Environmental Health Specialist

cc: Brian Carlson, Clark County Solid Waste Engineer  
Cris Mathews, Department of Ecology

### ADDRESS REPLY TO APPROPRIATE OFFICE:

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(509) 493-1558

GOLDENDALE/KLICKITAT COUNTY HEALTH CENTER  
228 WEST MAIN STREET  
Goldendale, WA 98620  
(509) 773-4565







proud past, promising future

CLARK COUNTY  
WASHINGTON

June 23, 2003

Caren Carlson  
Circle C Corporation  
31313 Paradise Park Road  
Ridgefield, WA 98642

Re: Circle C Landfill

Ms. Carlson:

The proposed changes for post closure monitoring requirements regarding Circle C Landfill as described in Mr. Dykes letter dated 3-31-03 is approved by the Clark County Health Department. The Department of Ecology has also reviewed the proposed changes and concurs with the Health Department's approval. The proposed changes include the following:

- Reduce groundwater analytical parameters to chloride, sulfate, nitrate manganese, TOC and COD eliminating coliform nitrite, ammonia, iron and zinc.
- Monitoring well MW-4 and the underdrain will be analyzed for the above parameters plus arsenic, chromium, selenium and mercury eliminating barium, cadmium, lead, silver as well as VOC's.
- Limit surface water analytical parameters to Chloride, sulfate, nitrate, manganese, TOC, COD and turbidity.
- Lysimeter analysis at the irrigation area will be chloride, nitrate, pH, specific conductance and manganese discontinuing iron.
- Soil analytical parameter will include arsenic, chromium, selenium, mercury, pH, nitrate, phosphorus, cation exchange capacity, and organic matter. Ammonia and TKN will be eliminated.
- A background soil sample will be taken at a location west of the irrigation area and tested for metals providing reference data.
- Semi-annual sample results and analysis will be compiled in the Annual Report to be sent to the Health Department. It is understood the Health Department will be notified immediately upon any significant increase in groundwater or surface water contamination or gas migration as a result of landfill releases.

Contrary to what may have been implied before, Circle C Landfill will continue to be regulated under Chapter 173-304 WAC. 173-350 WAC applies only to currently operating or future solid waste handling facilities.

Regarding landfill gas production, the solid waste rules require that landfill gas must be managed. This includes containment, collection and treatment if necessary. It also implies acquiring a permit from the local Clean Air Authority if required.

The Health Department agrees the proposed changes will not significantly affect Circle C Landfill's ability to adequately monitor for releases of contaminants or gas. I can be reached at 360-397-8061 if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Gary Bickett".

Gary Bickett  
Program Manager

C: Dennis Dykes, Bright Fields Groundwater, Inc.  
Cris Matthews, Department of Ecology  
Chuck Matthews, Department of Ecology



SOUTHWEST WASHINGTON HEALTH DISTRICT  
PERMIT  
SOLID WASTE HANDLING

ID# 388

**Circle C Landfill**

31313 Paradise Park Rd  
Ridgefield, WA 98642

Owner: Circle C Corporation  
Contact Person: Caren Carlson

**Closed LP Landfill**

Valid for **Circle C Corporation**

who is granted permission to conduct solid waste  
handling activities specified in accordance with local  
and state ordinances, rules and regulations thereof.

EFFECTIVE DATES: 03/01/2002 TO 02/28/2003

Karen R. Steingart, MD, MPH, Health Officer

(Post in a Conspicuous Place)